United States
Department of
Agriculture

**Soil
Conservation
Service**

Richmond,
Virginia

National Resources Inventory

Virginia Summary
1987

Table of Contents

National Resources Inventory

The 1987 National Resources Inventory (NRI) is the latest in a series of inventories conducted by the U.S. Department of Agriculture's Soil Conservation Service (SCS). In Virginia, data were collected on 2,702 primary sample units (PSU's). Each PSU contained three sample points where information was gathered. SCS field personnel, with the help of soil and water conservation district employees, gathered the data.

The NRI provides updated information on the condition of Virginia's soil, water, and related resources on rural non-federal land. Included are data on land use, land cover, erosion by water, prime farmland, water bodies, irrigation, and conservation treatment needs for various land uses. Analysis of changes can be made using the 1982-87 NRI data base. The 1987 NRI does not reflect changes in land treatment stemming from the Food Security Act of 1985. Future NRI's will reflect changes incurred by the act. The data base is nationally consistent for all non-federal rural lands and can be correlated with soils data.

Benefits of Inventories

SCS conducts inventories and monitors the status of land use, soil, water, and related resources. Inventories allow SCS to provide Congress and others with the data required for effective policy and program development for using and managing the Nation's resources, developing agency work goals, and evaluating the effectiveness of resource conservation programs.

Inventory and Monitoring (I&M) Methods

SCS uses standardized techniques and procedures in I&M activities. Inventories are designed to monitor changes in natural resources, to provide information on the causes of change and to predict trends. Inventorying involves examination of a particular population or universe of resources, materials, or information. The universe is examined by observing all of its units (census) or some of its units (sampling). A census or sampling procedure can be supplemented by remote sensing.

The NRI is designed to collect resource data through primary sample units selected by a stratified random sampling procedure.

When using resource data from the NRI and similar inventories, it is important to realize that each item being estimated has a different level of precision or reliability. Characteristics that are common and spread with relative uniformity over the region of interest have smaller coefficients of variation than characteristics that are rare and unevenly distributed. Consequently, in a multiple-purpose survey like the NRI, the common items sampled are estimated more precisely than the less common items.

History of Resource Inventories

The 1977 NRI was the first inventory to provide comprehensive erosion data collected on scientifically selected sample sites. There were 1,764 PSU's sampled in Virginia. The data are considered reliable at the State level.

The 1982 NRI was designed to meet the appraisal needs of the Soil and Water Resources Conservation Act of 1977 (RCA). Twice as many resource data items were collected in the 1982 NRI than there were in the 1977 NRI. The 1982 NRI is reliable at the Major Land Resource Area (MLRA) level. There are ten MLRA's in Virginia. A total of 8,861 PSU's were included in the data base. The data were expanded to provide information by individual counties. Inventories were conducted in Fairfax and Loudoun Counties, to obtain statistically reliable data at the county level.

The 1987 NRI was designed to update the 1982 NRI and to be reliable at the state level. The sample included 2,702 PSU's in Virginia.

The next NRI will be done in 1992 and has not yet been designed.

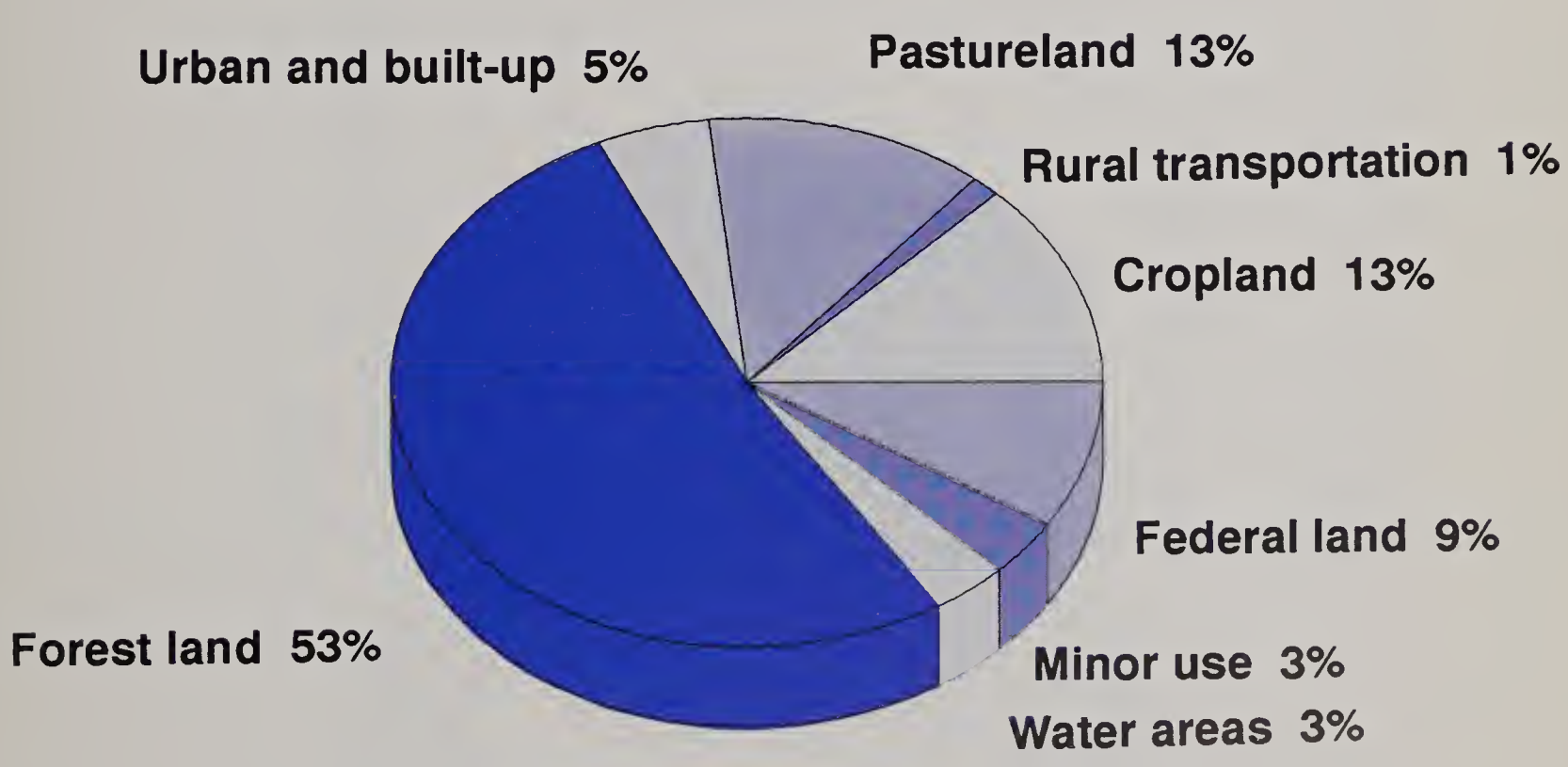
Land Cover / Use in Virginia

The major land use in Virginia is forest land. Non-federal agricultural land including cropland, pastureland, and forest land accounts for 20,245,800 acres, or about 78 percent of the land use.

Other land, 5,844,800 acres includes urban and built-up areas, rural transportation (roads and railroads), minor use areas (farmsteads, pits, quarries, and miscellaneous areas), federal land, and water areas.

1987 Land Cover / Use in Virginia

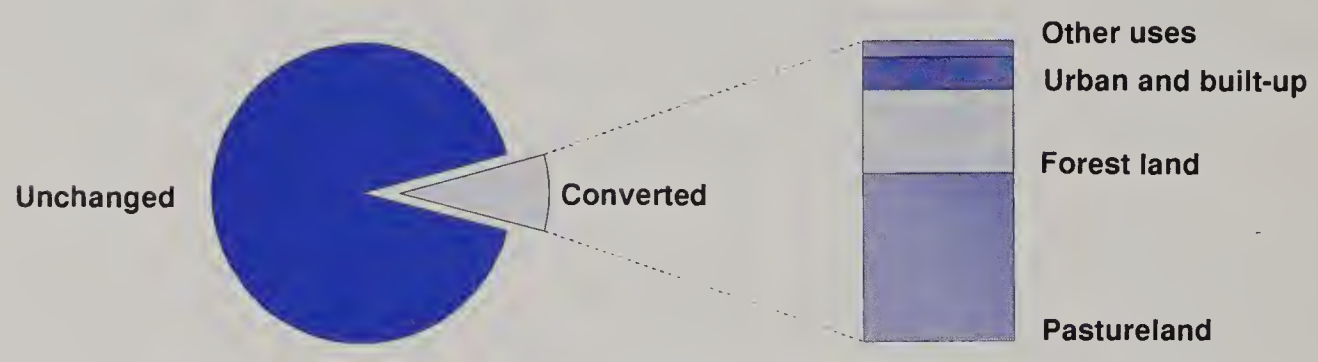
(in percentage of acres)



Changes in Land Cover / Use

From 1982 to 1987, an estimated 280,300 non-federal acres were converted from cropland to other uses, mainly pastureland and forest land. During the same period, about 192,300 non-federal acres of mainly pastureland and forest land were converted to cropland.

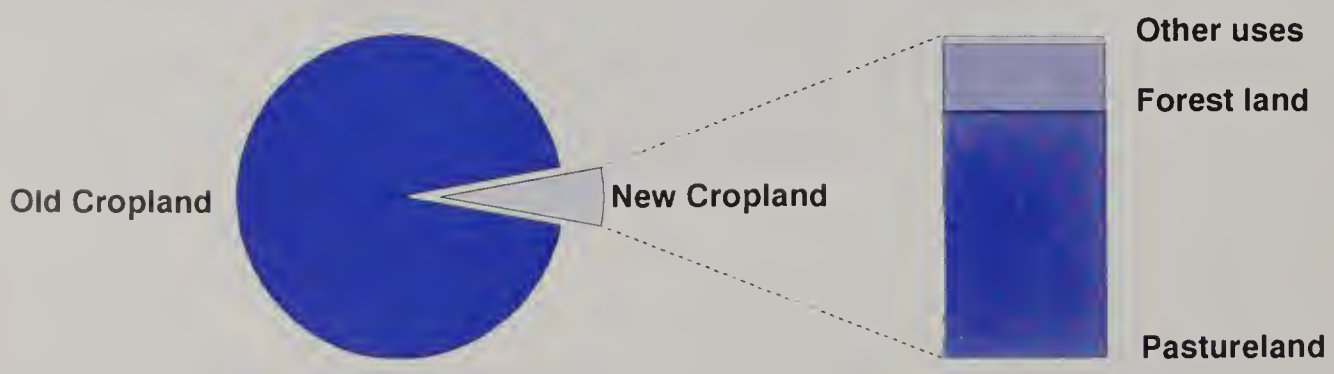
1982 Cropland Conversion to Other Uses



1982 total cropland
3,396,900

By 1987, 280,300 acres of 1982 cropland were converted to these uses

1987 New Cropland Conversion from 1982 Non-cropland

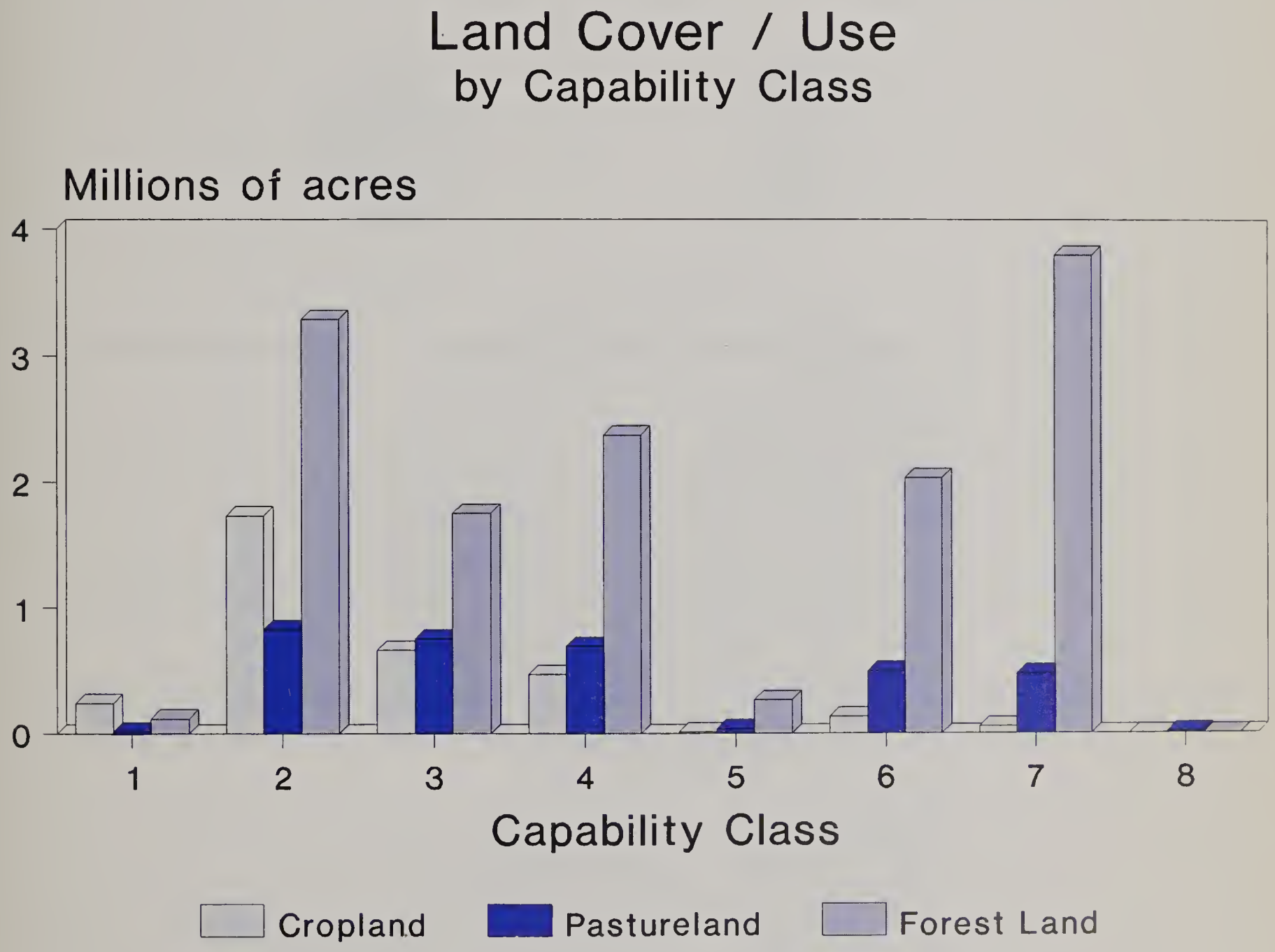


Total 1987 Cropland:
3,308,900

Between 1982 and 1987, 192,300 acres were converted into new cropland

Capability Classes

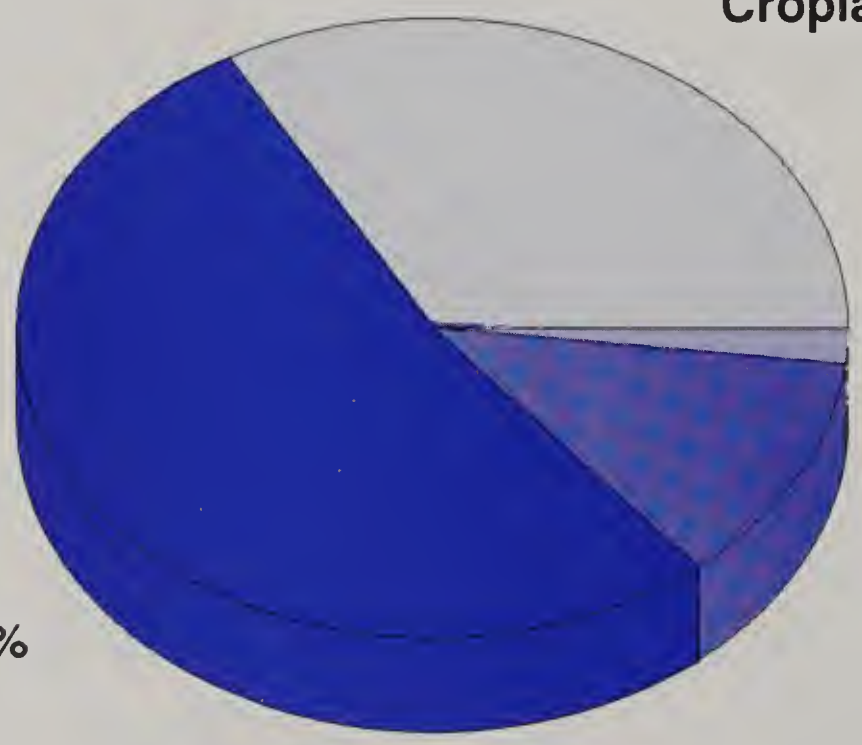
Land capability groupings are used extensively by soil conservationists and farmers. The figures indicate progressively greater limitations and narrower choices for practical land use with class 1 having the fewest limitations. About 52 percent of the non-federal cropland is capability class 2. About 69 percent of the non-federal pastureland is capability class 2, 3, or 4. About 52 percent of the non-federal forest land is capability class 2 or 7.



Prime Farmland

Prime farmlands are agricultural acres that are the most productive and present the fewest problems in raising agricultural commodities. Prime farmland now totals 5,154,200 acres of total non-federal rural land.

1987 Prime Farmland
Land Cover / Use



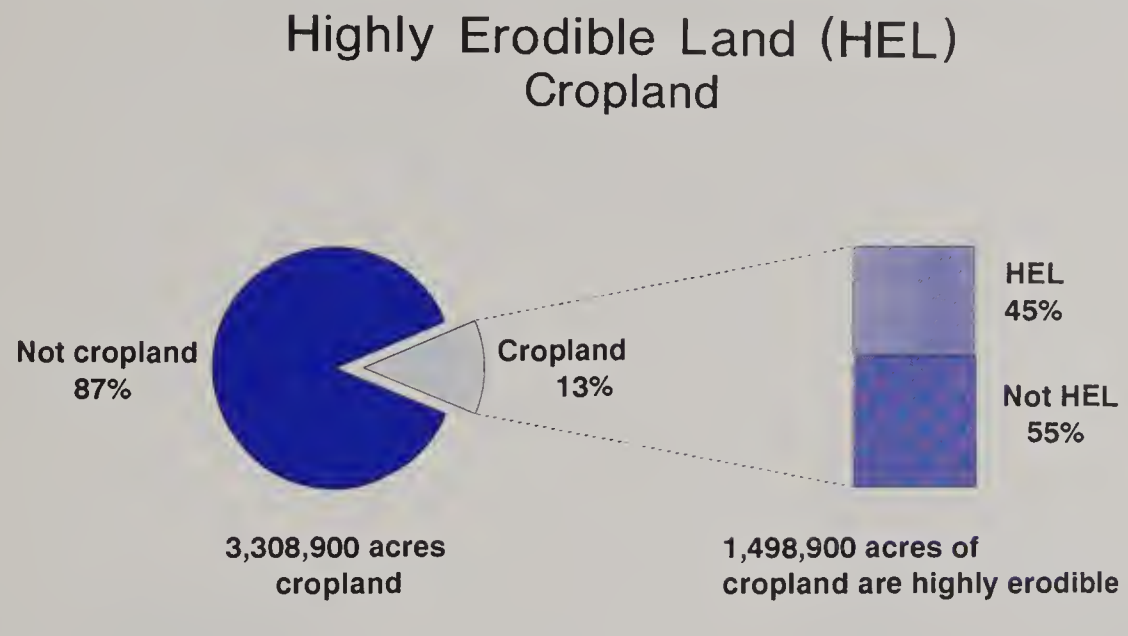
5,154,200 acres of non-federal rural land are prime farmland

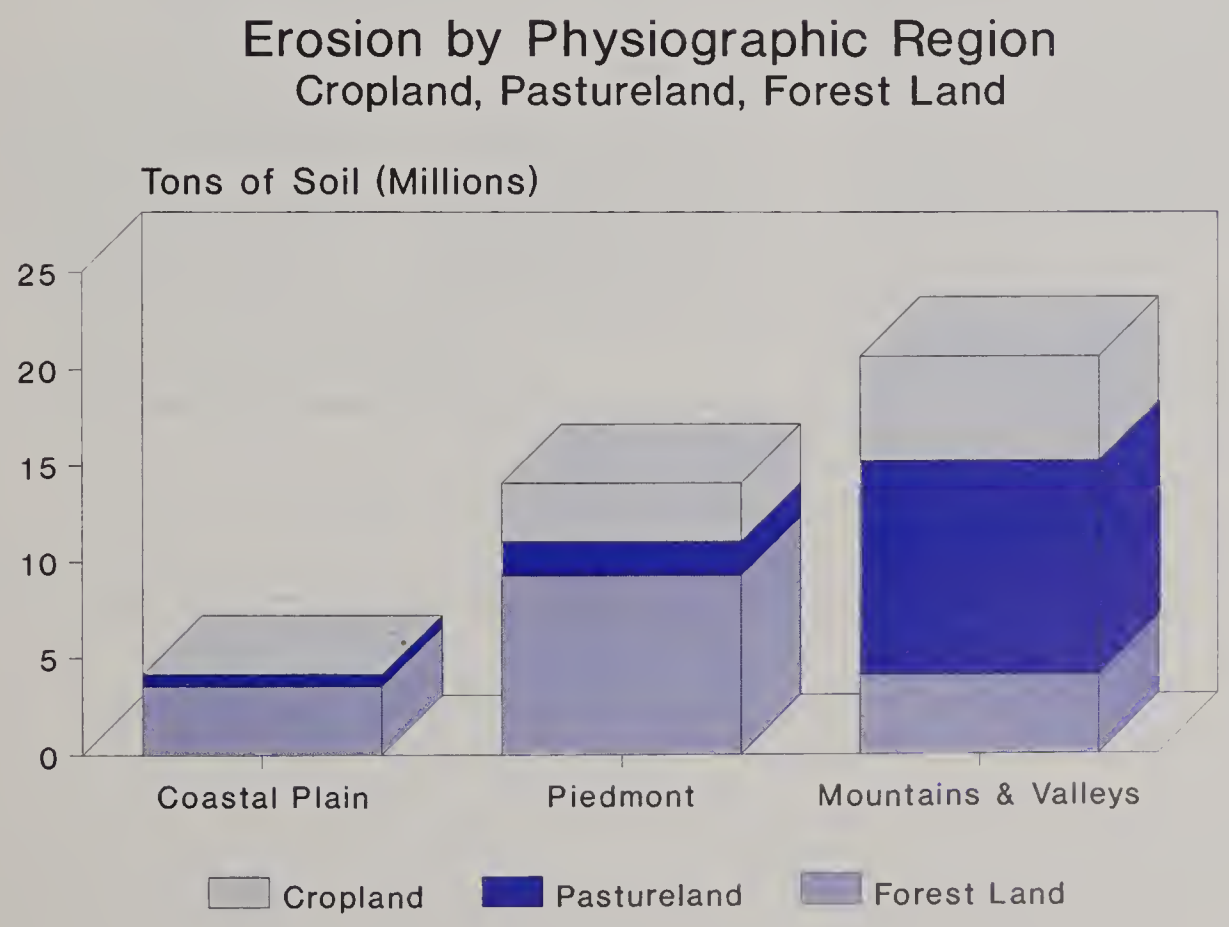
Erosion

Sheet and rill erosion account for 99 percent of erosion on Virginia's rural lands; wind erosion accounts for the remaining 1 percent. Forty-five percent of non-federal cropland meets the 1985 Food Security Act definition of highly erodible land.

Gross erosion on rural land decreased from 44.7 million tons per year in 1982 to 42.1 million tons per year in 1987.

The Coastal Plain accounted for 11 percent, the Piedmont for 36 percent, and the Mountains and Valleys for 53 percent of the gross erosion on rural land in 1987.

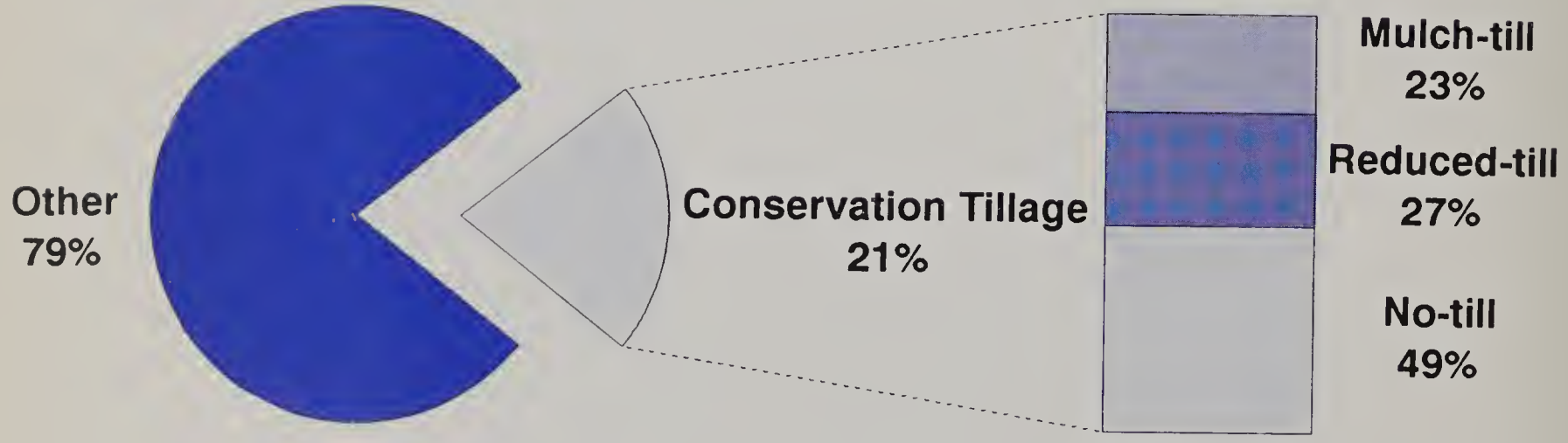




Conservation Tillage

For the first time, conservation tillage practices were included in the NRI. Conservation tillage was practiced on nearly 704,400 acres of Virginia cropland. No-till was the most common method of conservation tillage accounting for 347,000 acres.

Conservation Tillage
All Cropland, 1987
(in percentage of acres)



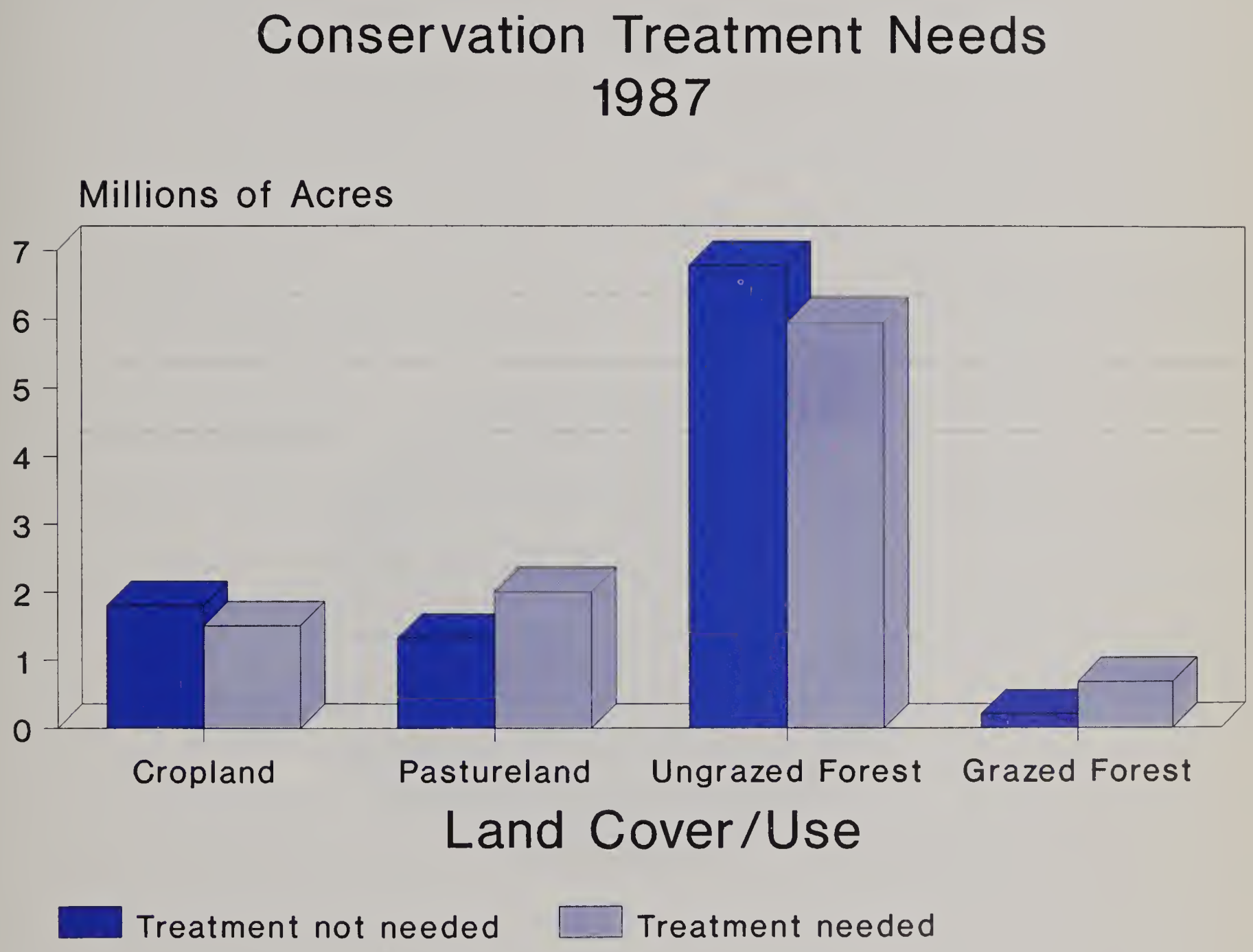
1987: 704,400 acres of conservation tillage

Breakdown by type of conservation tillage

Conservation Treatment Needs

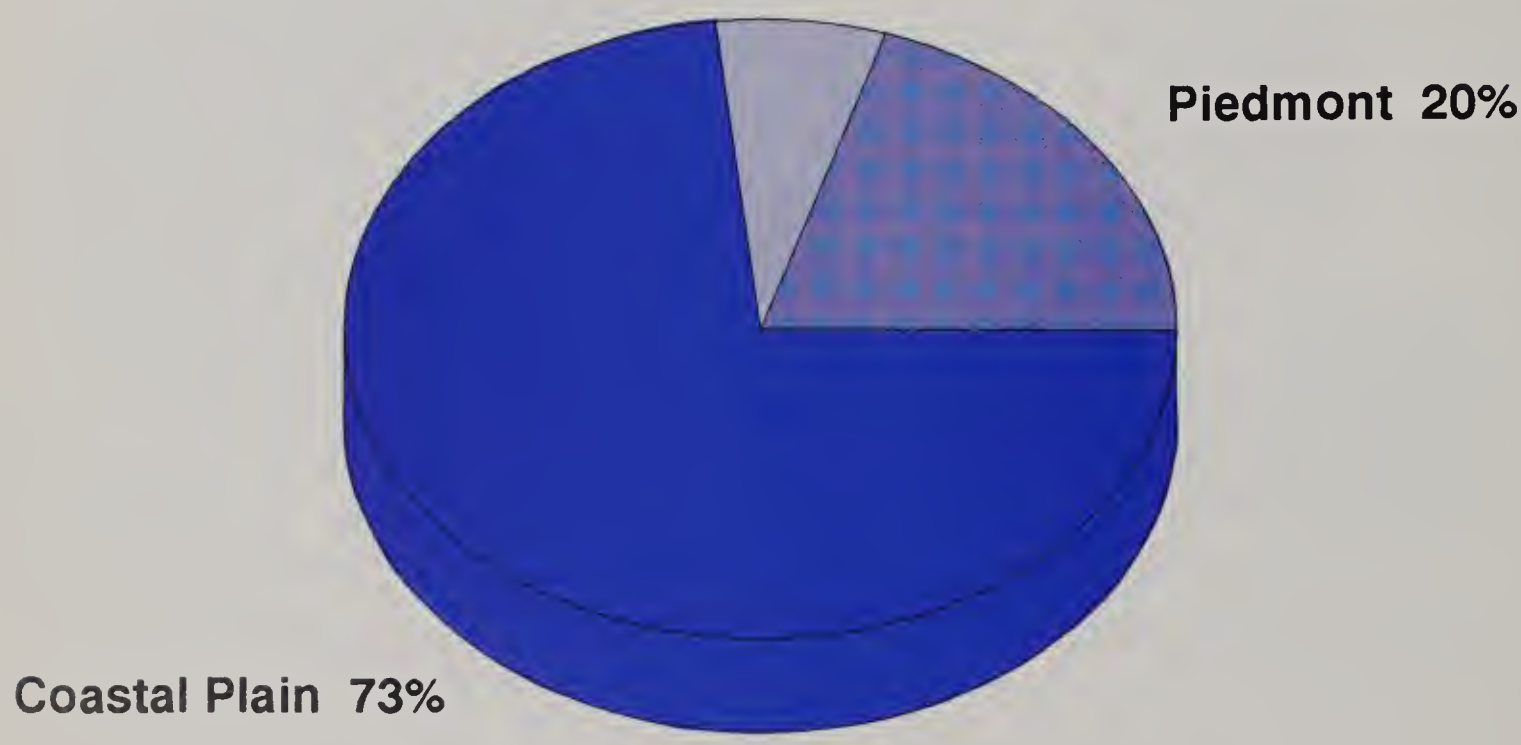
Approximately 10.3 million (49 percent) of all non-federal rural land acres need some conservation treatment:

1.4 million (42 percent) cropland acres need erosion control.
1.4 million (42 percent) pastureland acres need management for forage improvement.
4.9 million (38 percent) ungrazed forest land acres need timber stand improvement.
0.7 million (38 percent) grazed forest land acres need treatment to improve forage crops.



Based on the 20 wetland types provided in Circular 39, Department of Interior, Fish and Wildlife Service, about 7 percent of Virginia is wetland. These areas do not exactly match with areas meeting the wetland definition in the "Federal Manual for Identifying and Delineating Jurisdictional Wetlands, An Interagency Cooperative Publication," Fish and Wildlife Service, Environmental Protection Agency, Department of the Army, and Soil Conservation Service. About 73 percent of the wetlands are in the Coastal Plain physiographic province.

Wetlands
by Physiographic Region



1987: 1,691,700 acres of wetland

More Data

This summary shows a small portion of the data collected in 1982 and 1987. Other data collected include information about conservation practices, conservation treatment needs, erodibility indices, irrigation, specific land cover/use, ephemeral gullies, potential for conversion to cropland, and soils.

NRI data are available through a computer data base. In addition to the summaries in this report, a query system can be used to obtain a wide variety of reports. Information can be collected by groups of counties, major land resource areas (MLRAs), or hydrologic units. Use of this system may be requested through the State Conservationist, Soil Conservation Service, 400 N. 8th Street, Richmond, Virginia, 23240-9999, or call 804-771-2455.

December 1990